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November 3, 1993

Donna R. Searcy, Secretary
Federal Communications Commission
Washington, D.C. 20554

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Dear Ms Searcy:

Enclosed please find the original and twelve copies of Cobra Electronics Corporation's comments on ET Docket No. 93-235 RM-8094, in the matter of Amendment of Parts 15 and 90 of the Commissions Rules to provide additional frequencies for Cordless Telephones. Please distribute them to the appropriate parties for consideration.

An additional copy is enclosed, along with a self addressed stamped envelope, to be stamped with date received and returned to me.

Sincerely,

COBRA ELECTRONICS CORPORATION

Max Rogers

Max Rogers
Chief Engineer

MR:br

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of)	
)	
Amendment of Parts 15 and 90)	ET Docket No. 93-235
of the Commission's Rules to)	RM - 8094
Provide Additional Frequencies)	
For Cordless Telephones)	

Comments of Cobra Electronics Corporation

Cobra Electronics Corporation (formerly Dynascan Corporation, hereinafter "Cobra") is a Chicago, Illinois based United States Corporation engaged in the design, development, and marketing of consumer electronic products. It was one of the earliest entries into the cordless telephone marketplace, and has participated extensively in the development of the cordless telephone market, both through its own efforts as an innovator of unique cordless telephone products, and through its active participation in the Mobile and Personal Communications Consumer Radio Section of the Telecommunications Industry Association. It therefore feels highly qualified to comment on the instant proceeding and its potential consequences to the cordless telephone industry.

In 1993 it is estimated that 46/49MHz U.S. cordless phone sales should exceed 18 million units. This would be an increase of approximately 2 million units over 1992 sales, which were significantly higher than 1991 sales. In fact, it is estimated that there are now probably more than 60 million 46/49MHz cordless phones in operation in the United States.

It is clear that with this many phones operating on only 10 channels, 5 of which are shared by other Part 15 devices, channel interference is commonplace, particularly in congested urban areas, leaving little or no room for the continued growth of this service. It also seems clear that the addition of several new channels would go a long way toward not only allowing the cordless phone industry to grow, but to offer as well an alternative to the present 60 million or more cordless phone users, some of whom are experiencing difficulty because of interference.

The Commission proposes, based on RM-8094, to expand the number of duplex cordless phone channels from 10 to 25 by making secondary use of 30 additional frequencies which are under Part 90, Private Land Mobile Radio Service.

Cobra applauds the commission's efforts and is pleased to support the additional 15 duplex channels, and agrees with paragraph 16 of the NPRM, that there should not be pairing of the new frequencies, and that the base should be on the lower frequencies. Cobra also feels that channel offsets should not be allowed on either the new frequencies or the old frequencies, for the reasons spelled out by TIA and others including Cobra, sometime ago in separate filings regarding channel offsets.

Cobra agrees in principle with paragraph 12 in regard to automatic channel monitoring on the new channels to prevent activation on a channel already in use by either another cordless phone or a Private Land Mobile Product. In particular, Cobra feels that the revised TIA requirement which states that cordless phones using these new frequencies must "Incorporate an automatic channel selection mechanism which will prevent establishment of a link on an occupied frequency" seems appropriate for a multichannel phone. However, as the Commission noted, this would preclude the sale of single channel phones on the new frequencies. From a marketing standpoint this may seem acceptable, because a multichannel phone and single channel phone, on the old 10 channel frequencies are very close in retail price and electrical performance although, a single channel phone is obviously more prone to have interference. It remains to be seen, however, if the relationship between price, performance and interference will stay the same on the new frequencies.

For example, the bandwidths of both the new 49MHz band and the so called new 46MHz band have been increased. In particular, the new 46MHz band is now 3.25MHz wide (46.970 - 43.720) whereas the old 46MHz band was 0.36MHz wide (46.970 - 46.610). Couple this with the reduced minimum duplex spacing from approximately 3MHz (49.670 - 46.610) to as little as 1.8MHz (48.760 - 46.970) and it is clear that it is going to be much harder to filter the 49MHz transmitter out of the 46MHz receiver in the portable front-end. With the maximum new duplex spacing of over 6MHz (49.990 - 43.720) instead of the current 3MHz, it is also going to be harder to keep the base and portable antennas properly tuned to both the transmit and receive frequencies. It is therefore entirely possible that any or all of the above differences could significantly reduce the electrical performance of a new 25ch phone, unless considerably more complexity and cost is added to the product.

These potential difficulties may cause the marketplace to want to reconsider the need for a good low cost, yet high performance single channel unit which would require few if any, performance or cost trade-offs, since the single channel bandwidth can still be narrow and the duplex spacing selected to be 3MHz or more.

There are also some unanswered questions concerning the implementation of the automatic channel monitoring system. In fact, after close examination it would appear that the channel monitoring scheme will not always work as intended. For instance, when the base receives a ring signal, one of the first things that it should do is to ask the portable to check the portable receiver to see if the base transmit frequency is busy. Suppose, however, that there is a PLMRS transmitter operating on the base transmit frequency at that time, which is close enough to the portable to significantly interfere with the portable receiver. In this scenario the portable would never receive the request from the base. The net result is that the system would not link up and the portable would not ring. In fact, the cordless phone would be rendered useless for as long as the interfering PLMRS signal was present.

Even though a cordless phone is a secondary service and is supposed to accept interference it is quite obvious that the above situation is unacceptable from the standpoint of the cordless phone user. There are probably some modifications that could be made to the channel monitoring system to reduce or eliminate this problem. For example, maybe a combination of pre-scanning along with real time scanning would help. Perhaps allowing the base transmitter to stay on for several seconds trying to communicate with the portable would help. Maybe just a more elaborate scanning system would help.

In any event, Cobra feels that a thorough study of the channel monitoring system is needed to determine what refinements would be required to make it more acceptable to the end user, and still inexpensive to incorporate.

Cobra is also very concerned about the 30 days effective date specified in paragraph 21 of the NPRM. As was indicated in the opening paragraph of these comments, Cobra was one of the earliest entries into the cordless telephone marketplace, and remembers all too well when cordless phone frequencies moved from 1.7/49MHz to 46/49MHz in the mid 1980s. It also remembers when CB channels were increased from 23 to 40 in the mid 1970s. In both instances the effect was almost the same and caused Cobra, along with just about everyone else in the business at the time, great hardship. In particular, most companies suddenly found that their old inventory, after the effective date, was devalued by more than 50%. This was not necessarily because the retail customer thought that the old product had less value, but because the middleman buyer thought so and was only interested in buying the new product.

Due to long production lead times companies such as Cobra have to irrevocably commit to production quantities several months in advance and therefore always tend to have high inventories. Cobra's 1994 cordless phone product line is also already well into development and is presently not configured to allow models to be changed over to 25ch. This means that after the effective date, Cobra as well as other companies, could again be left with months of old inventory that could end up being highly discounted, plus new products that are obsolete before they are even introduced. There are no easy solutions to the above problems. It is Cobra's contention however, that the only way to minimize these problems is to have a 6 to 12 month period after the final Report and Order, instead of 30 days, before the rules would be effective. This would give hopefully enough time to properly dispose of old inventory and allow an orderly transition into new 25ch cordless phone products.

This 6 to 12 months should also give more time to allow the new product to flow smoothly through the FCC certification process without unduly loading down the FCC or outside testing labs.

In summary, Cobra is more than happy to support the formation of the new frequencies that will allow for 15 new duplex channels. Cobra also supports not pairing the new frequencies and not allowing for channel offsets on either the new frequencies or the original frequencies.

Cobra feels that the automatic channel monitoring system as proposed is too vague and needs some further clarification. For example, how will it function to always guarantee quick line access in every situation? In addition Cobra does not think that single channel phones should necessarily be excluded from all of the new frequencies and would hope that some provision could be made that would allow them to be used on at least some of the new frequencies.

Finally, Cobra is extremely concerned about a possible frequency expansion program that could cause a problem in the mid 1990s as happened in the mid 80s and 70s and proposes a minimum of 6 to 12 months after the Report and Order is published for these rules to become effective.

Respectfully Submitted,

COBRA ELECTRONICS CORPORATION



Max Rogers
Chief Engineer